

COMPOSITIONS AND METHODS FOR DETERMINING
ANTI-VIRAL DRUG SUSCEPTIBILITY AND RESISTANCE
AND ANTI-VIRAL DRUG SCREENING

5 **Abstract of the Disclosure**

10 This invention provides a method for determining
susceptibility for an anti-viral drug comprising: (a)
introducing a resistance test vector comprising a patient-
derived segment and an indicator gene into a host cell; (b)
15 culturing the host cell from (a); (c) measuring expression
of the indicator gene in a target host cell; and (d)
comparing the expression of the indicator gene from (c) with
the expression of the indicator gene measured when steps
(a)-(c) are carried out in the absence of the anti-viral
20 drug, wherein a test concentration of the anti-viral drug is
present at steps (a)-(c); at steps (b)-(c); or at step (c).
This invention also provides a method for determining anti-
viral drug resistance in a patient comprising: (a)
determining anti-viral drug susceptibility in the patient at
25 a first time using the susceptibility test described above,
wherein the patient-derived segment is obtained from the
patient at about said time; (b) determining anti-viral drug
susceptibility of the same patient at a later time; and (c)
comparing the anti-viral drug susceptibilities determined in
30 step (a) and (b), wherein a decrease in anti-viral drug
susceptibility at the later time compared to the first time
indicates development or progression of anti-viral drug
resistance in the patient. This invention also provides a
method for evaluating the biological effectiveness of a
candidate anti-viral drug compound. Compositions including
resistance test vectors comprising a patient-derived segment
and an indicator gene and host cells transformed with the
resistance test vectors are provided.